

THE PURPURICENINE GENUS *SCYTHROLEUS* BATES
(COLEOPTERA: CERAMBYCIDAE)

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The purpuricenine genus *Scythroleus* (σκυθρος, sullen) Bates (1885) was erected to accommodate the new species *picticornis*, described from a melanistic female from the "Bay of Tehuantepec" in southern Mexico. Almost a century later, specimens are exceedingly rare in collections, and the genus remains monotypic with only the female described.

While he recognized that the structural characters of *Scythroleus* placed it near the genus *Tragidion* Audinet-Serville, Bates observed, "In general form and sculpture, however, the genus bears no resemblance to *Tragidion*, the form being convex and nearly cylindrical, with the surface densely and finely sculptured, without costae or other inequalities." Apparently, Bates was not acquainted with *T. armatum* LeConte (1858), and he certainly was not familiar with *T. gracilipes* Linsley (1940). Both are decidedly more convex and cylindrical than the other members of *Tragidion*, and neither has elevated elytral costae.

Recently, in the mountains of southern Sinaloa, Mexico, E. F. Giesbert and I collected two specimens of *S. picticornis*, a male and a female, which provide additional evidence of the close relationship of *Scythroleus* to *Tragidion*. Both specimens are remarkable in that the elytra are fulvous with only the extreme basal margins black, whereas the type (according to Bates' description) and the only other example of *picticornis* I have seen are entirely black, excepting the orange basal portions of the flagellar antennal segments. Thus the general form and color pattern of the new specimens are essentially those of *T. armatum* and *T. gracilipes*, although their linear dimensions are about 50 percent greater than those of larger examples of either of the latter species.

The primary structural distinction noted by Bates was the near absence in *Scythroleus* of the prominent carinae separating the frons from the anteocular spaces in *Tragidion*. But the Sinaloan specimens of *S. picticornis*, particularly the male, have carinae which are quite prominent, far more so in fact, than those typical of *T. armatum*. Moreover, the prominent, cornute antennal tubercles which inspired Serville to construct the name *Tragidion* (τραγος, he-goat)¹, but which Bates described as only "*breviter cornuta*" in the type of *S. picticornis*, are present in the Sinaloan specimens of *picticornis* and exceeded in prominence only by those of *T. annulatum* LeConte.

Despite the similarities noted above, the material at hand indicates that the generic distinction between *Scythroleus* and *Tragidion* merits continued recognition. While the habitus of the male *S. picticornis* (Fig. 1) is that of a large male *Tragidion*, that of a female is immediately distinguished by the

¹ Anyone familiar with the rather unpleasant odor of a freshly captured adult *Tragidion* will appreciate that τραγος also means "the smell of the arm pits," a curious coincidence that in all probability escaped Serville's notice!



Fig. 1, Male *Scythroleus picticornis* Bates from southern Sinaloa, Mexico.

trapezoidal, as opposed to circular, pronotal outline. In addition, the dorsum of both sexes is shining in *Scythroleus*, opaque in *Tragidion*.

Several features of the prothorax of both sexes of *Scythroleus* also distinguish the genus. The lateral margins, which in *Tragidion* are prominently and acutely tuberculate, are only broadly angulate. The pronotum, gibbose with several prominent discal calli in *Tragidion*, is rather plane and has only an indistinct median callus. The hair of the pronotum, erect in *Tragidion*, is appressed in *Scythroleus*. Finally, the prosternal process, which in *Tragidion* is plane between the coxae, arcuate behind, and bilobed at the apex, is in *Scythroleus* protuberant and ridged between the coxae, vertical behind, and not bilobed at the apex.

Below I have modified Bates' original generic and specific descriptions of *S. picticornis* to include the recently discovered male and new color variety.

Genus *Scythroleus* Bates

Closely related to *Tragidion*. Form robust, subcylindrical. Head small; frons vertical, broadly rectangular and recessed between lower ocular lobes, abruptly narrowed between antennal insertions, separated from clypeus and anteocular spaces by distinct, obtuse carinae; apex of mandible simple, acute; antennal tubercle cornute; antenna filiform, basal flagellar segments incrassate. Prothorax broader than long; lateral tubercles obtuse, not prominent, rendering pronotal outline rather circular in male, trapezoidal in female; disc planar, callosities poorly defined; prosternal process protuberant and ridged between coxae, vertical behind. Mesosternum protuberant between coxae; scutellum subtriangular, about as broad as long, apex rounded. Elytra elongate, parallel sided, surface smooth, without costae. Posterior leg rather slender, elongate; femur not attaining elytral apex.

Scythroleus picticornis Bates

Male. Form large, sides subparallel. Integument shining, pubescent, finely, densely punctate; pubescence thin on dorsum, much denser on venter, pale testaceous, becoming golden on head and appendages; color of head, legs, pro- and mesothorax predominantly black; elytra fulvous with faint brownish tinge on humeri becoming black along extreme basal margins. Head small; pubescence long, thin, erect and appressed above, erect, shorter and denser on frons; vertex and occiput coarsely, confluent punctate with a very irregular, smooth, glabrous median callus; frons moderately coarsely punctate, deeply recessed and 2 X as broad as high between lower ocular lobes, abruptly halved in width between antennal insertions, bisected by a thin groove extending from between antennal tubercles to lower $\frac{1}{4}$ of frons, thence abruptly flaring to form a smooth, glabrous, largely impunctate region extending nearly to lateral margins; antennal tubercle prominent, robust, cornute; antenna 11 segmented, exceeding elytral apex by three segments; scape robust, subcylindrical, about 3 X as long as wide, 3rd segment about 1.5 X as long as scape, distinctly longer than 4th, subequal to 5th through 9th, 10th subequal to 3rd, 11th almost 1.5 X as long as third, apical $\frac{2}{5}$ th appendiculate; pubescence golden, short, suberect, moderately dense on scape and basal flagellar segments, becoming much shorter, thinner, appressed on apical segments; segments 3 and 4 densely, segments 5 through 8 sparsely, fimbriate with black and golden on inner margins; scape and pedicel red-brown to black, flagellar segments bright burnt orange, segments 3 through 10 apically annulate and penicillate with black; lower lobe of eye ovoid, broader than high, slightly shorter than gena, upper lobe scarcely broader than isthmus; eyes separated above by almost 5 X width of upper lobe. Pronotum $\frac{5}{7}$ as long as broad, as wide as base of elytra; apical margin about $\frac{4}{5}$ as wide as basal

margin, about $4/7$ as wide as greatest width of pronotum which lies at basal $2/5$ across lateral tubercles; lateral tubercle not prominent, apex subangulate; lateral margin arcuate, gently converging over anterior $3/5$, slightly convex and rather abruptly converging behind apex of tubercle, subparallel over basal $1/5$; prothorax with sternum, sides, and latero-anterior portions of pronotum opaque, very finely, densely granulated, pubescence sparse, recurved; disc shining, coarsely, confluent punctate, with a small, poorly defined, impunctate median callus at basal $1/4$; shining area covered with rather dense, long, appressed and scattered, erect pubescence, separated from opaque areas by a fine line, forming an amphora-like region which flares abruptly just before apical margin and continues along entire apical margin of prothorax, deepening laterally into a distinct, narrow groove which widens gradually on sternum; amphora-like region narrowest and about $1/3$ width of pronotum on anterior $1/4$ of disc, gradually widening posteriorly, abruptly widening at basal $1/4$, thence lobing forward into anterior half of pronotum, continuing laterally behind tubercles, where it deepens into a narrow groove which continues onto sternum, passes in front of the coxae and ultimately forms the lateral margins of the prosternal process; prosternum shallowly concave in front of coxae, prosternal process about $1/3$ as wide as procoxal cavity, ridged between and projecting above coxae, vertical behind and not projecting beyond coxae. Mesosternum slightly protuberant between coxae, posterior margin broadly emarginate and bilobed; scutellum as broad as long, finely, densely punctate, pubescence appressed, obscuring surface. Metasternum very finely, densely punctate and pubescent throughout. Elytra $2\frac{1}{4}$ times as long as basal width, subparallel, converging slightly over apical $1/3$; apices subtruncate, rounded externally, subangulate at suture; surface densely, rather finely, subconfluent punctate throughout, pubescence dense, fine, very short and inconspicuous, costae present only as fine, impunctate, scarcely raised lines. Legs finely, densely punctate, pubescence testaceous on femora, golden on tibiae and tarsi; posterior femur surpassing apex of 4th abdominal segment; anterior tibia with dense, golden pile internally; intermediate and posterior tibiae densely setose; posterior tibia straight, slender; tarsal segments robust, first segment of posterior tarsus $1\frac{1}{2}$ X as long as second, subequal to third, little more than half as long as fifth. Abdominal sternites very finely, densely punctate and pubescent, excepting apical margins which are polished, glabrous, impunctate; fifth sternite distinctly longer than fourth, narrowing apically, apex broadly, shallowly emarginate. Length 33 mm.

Female. Integument black, excepting flagellar antennal segments which are burnt orange, annulate with black on apical $2/5$; elytra either wholly black or wholly fulvous with only the extreme basal margins black. Antennal tubercle less prominent than in male; antenna not or scarcely exceeding elytral apex, pubescence predominantly black. Pronotum $5/6$ as long as broad, distinctly narrower than base of elytra; apex of lateral tubercle obtusely angulate; lateral margin abruptly converging and slightly concave behind tubercle; pronotum shining, densely, coarsely, confluent punctate, excepting latero-basal areas which are subopaque and granulate, but not separated by distinct lines; pubescence suberect, moderately long, rather sparse; prothorax subopaque, densely, coarsely, granulate-punctate on sides, abruptly becoming shining and shallowly, less densely punctate on sternum. Elytral punctures distinctly separated, subconfluent near apices only. Pubescence of intermediate and posterior tibiae and tarsi predominantly black. Abdomen with 5th sternite subrectangular, apex very broadly emarginate and margined with dense, recurved, specialized setae. Length, 32 mm.

Except that adults are diurnal, little is known of the habits or host preferences of *Scythroleus*. The single example in the University of California at Berkeley collection was intercepted during an agricultural quarantine at Blythe, California and is labeled "in sugar cane." Near our Sinaloan collection locality, a long time resident of the area recognized a specimen

of *Scythroleus* in a killing jar among numerous other cerambycids and commented that the insect was rather common in the local cornfields. Unfortunately, we did not have the opportunity to verify the remark, but it is interesting that the two potential hosts, corn and sugar cane, are members of the same family and have certain obvious structural similarities. Presumably, these would not be the only hosts, since sugar cane is apparently of Old World origin (Bailey 1947), and both are cultivated plants quite unlike their ancestral forms.

In light of the close relationship of *Scythroleus* and *Tragidion*, it is reasonable to assume that examples of *Scythroleus* with fulvous elytra, like similarly colored species of *Tragidion*, are mimics of orange winged pompilid wasps of the genus *Pepsis*. Although apparently not noted in the literature (see, for example, Hurd 1952, pp. 269-270), it is well known to collectors that adult *Tragidion*, particularly females, whether flying or at rest, are often difficult to distinguish from the xanthochromatic species of *Pepsis* which commonly occur at the same localities and even feed together with *Tragidion* on the same plants. The mimicry involves the sound of flying and general demeanor as well as form and color. Further evidence of the mimicry is provided by the fact that *T. coquus* (Linnaeus), the only species of *Tragidion* with predominantly black elytra, is the exclusive representative of the genus in eastern North America where xanthochromatic species of *Pepsis* do not occur² (Hurd 1952).

Numerous melanochromatic as well as xanthochromatic species of *Pepsis* occur throughout Mexico and Central America, and it is possible that the former serve as models for the melanistic form of *Scythroleus*. It will therefore be interesting to learn to what extent the ranges of the two known color varieties of *Scythroleus* overlap and whether intermediate color varieties exist. Should the two varieties prove to be subspecifically distinct, then we shall be confronted with the intriguing question of why only one of the two ubiquitous color varieties of *Pepsis* serves as the model in one region while the other serves as the model in another region.

Specimens of *S. picticornis* examined. 30 km W. El Palmito, Sinaloa, Mexico: 1 male, X-9-76 (D. Skiles, sitting on foliage of broad leaved plant), 1 female, X-4-76, (E. F. Giesbert, D. Skiles, flying). 1 female, taken in agricultural quarantine at Blythe, California labeled "in sugar cane, Mexico City, Mexico, August 23, 1947." (Essig Museum of Entomology, University of California, Berkeley).

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² A small number of specimens of the West Indian xanthochromatic species *P. marginata* Palisot de Beauvois have been taken in extreme southern Florida.

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BOOK REVIEW

Diversity of insect faunas. Symposia of the Royal Entomological Society of London: Number nine. Ed. by Laurence Mound & Nadia Waloff. 1978. Blackwell Scientific Publications (John Wiley & Sons, Inc., One Wiley Drive, Somerset, NJ 08873). Hardbound, x + 204 p., \$37.50.

Subject matter is summarized in the editors' foreword, here parroted: "Variability of living organisms, and one of its results the diversity of faunas, has always occupied the minds of biologists. Recently, this theme has received a fresh impetus and has been reinvigorated by the critical examination of the relevant mathematical models by theoretical biologists, by the experimental approach of ecologists and by the new data obtained by palaeoecologists. This volume presents the different approaches of an international group of scientists, from a variety of biological disciplines, to this fundamental and rapidly expanding theme.

"The taxonomist is concerned with the constituents of diversity and their origin, whereas the ecologist is concerned with understanding the present day complexity of the systems of living organisms. Insects lend themselves well to these studies as their small size and the intricacies of their behavioural and physiological responses enable them to utilise a multitude of microhabitats within the different ecosystems. This, and their great motility and aerial dispersal, enables them to respond to environmental changes in space and time, and it is these attributes that may lie at the root of their diversification and diversity."

"This volume comprises the twelve papers which were read at the Ninth Symposium . . . held in Imperial College, London, on 22-23 September 1977."

Contributors include 1 from Finland, 4 from the USA, and 7 from Britain. There is an entomological slant, but only one paper (G. R. Coope: "Constancy of insect species versus inconstancy of Quaternary environments") has Coleoptera as its primary data base—and this is an excellent paper, indeed.

Production quality is excellent, and there are even two colored plates (of, ugh!, butterflies). I assume, as one would expect, that content is somewhat uneven in quality; however, most of the content is far beyond my competence to judge critically. I suspect that most readers of the *Bulletin* will find that the price tag outweighs desirability of possession. Those with a strong ecological bent, however, should examine a library copy from which to form their own opinions. Overall, I would expect this book to enjoy a rather wide distribution.

—D. R. W.